

# MANUKAU POLICE HUB TUNNEL

Manukau, New Zealand (2006)

## BACKGROUND

New Zealand's Manukau region is the busiest police district in the country. When considering the design of their new headquarters, the New Zealand Police knew that they needed to take advantage of the proximity of the site to the Courthouse which was directly across the street.

With both facilities expected to be stressed beyond their capacity, it was decided that an underground tunnel would be built to between the Manukau Police Hub to the adjacent Manukau Courthouse to create a direct passageway. There would also be a full basement development which would house cells to hold the overflow of prisoners. Both the basement and tunnel would be extremely valuable in easing the prison transfers between the two facilities. It was determined that the tunnel would be built out of fifty precast box culverts with the most sound structural integrity in mind.

## SOLUTION

When it came time to construct the tunnel, contractors Watt & Hughes Ltd. turned to Alco Agencies Ltd for their input. They knew they wanted to construct the tunnel with precast box culverts but how to waterproof them?

Alco Agencies Ltd recommended that Kryton's Krystol Internal Membrane (KIM) was the best waterproofing choice based on performance and pricing. Alco Agencies Ltd knew that KIM performed especially well in below-grade structures which were critical for this high-traffic tunnel. All fifty of the precast box culvert segments contained KIM, ensuring that they would be permanently protected from water ingress from the inside out. The joints between each segment would be waterproofed with external membranes.



*The underground tunnel between the police station and Courthouse would be used to transport prisoners.*



*All fifty of the precast box culvert segments were waterproofed with KIM.*

### OWNER:

New Zealand Police

### CONTRACTOR:

Watts & Hughes Ltd.

### TUNNEL SUB-

### CONTRACTOR:

McKenzie & Palmer

### PRECASTER:

Humes Pipeline Systems

### BOX CULVERT READY-

### MIXER:

Stevenson's

### BOX CULVERT CASTERS:

Humes

### TRANSITION READY-

### MIXER

Firth

### DISTRIBUTOR:

Fraser Brown & Stratmore Ltd.

### PRODUCTS & TECHNICAL SPECIFICATIONS:

Learn more at [kryton.com](http://kryton.com)  
 Krystol Internal Membrane (KIM)<sup>®</sup>  
 Krystol<sup>®</sup> Waterstop System

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First, the trench was cut creating the “bed” for the precast box culverts. Each segment was placed on a layer of external membrane, segment joints secured with external membranes; transitions at either end completed the tunnel. The transition to the Manukau Police Hub used a cast-in-situ system, which used Kryton’s flagship KIM product. The transition to the Courthouse was built with concrete masonry blocks.

Kryton was chosen based on the confidence of Allco Agencies Ltd recommendation as they knew that Kryton’s products had excellent performance and that they would have the on-site support they needed to complete the project in a timely manner.